

10/601,976
60,130-1269**IN THE SPECIFICATION**

Please amend paragraph 21 as follows:

Referring to Figure 1, a variable spring member assembly 10 includes a housing 12 defining an inner chamber 14. Within the chamber 14 are alternating layers of compressible medium and electro-reactive fluid medium. Preferably there are six layers with three layers comprising a compressible medium 17 and three layers comprising a compressible electro-reactive medium 19. Layer one 18 is comprised of compressible medium and separated from a second layer 20 of electro-reactive medium 19, by a sealed plate 16. The sealed plate 16 is disposed between each of the layers of compressible medium 17 and electro-reactive medium 19. The plates 16 are movable within the chamber 14 to allow for absorption of energy input from either an upper attachment member point 36 or a lower attachment member 38.

Please insert the following paragraph between paragraphs 21 and 22:

The upper attachment member 36 and the lower attachment member 38 are movable relative to the housing 12. At least one of the upper and lower attachment members 36,38 is attached to one of the sealed plates 16 to transfer input energy to the compressible medium 17 and to the electro-reactive medium 19. The transfer of input energy from the attachment members 36,38 compresses the layers 18,20. The movement of the upper and lower attachment members 36,38 relative to the housing 12 is proportionate to a compressibility of the compressible medium 17 and the electro-reactive medium 19.

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Please amend paragraph 25 as follows:

The chamber 14 includes the upper and lower attachment ~~members~~ member 36, 38 that are configured for a specific application. A worker knowledgeable in the art with the benefit of this disclosure would understand how to mount the spring member assembly 10 for a specific application. Each of the layers 18, 20, 22, 24, 26 and 28 are separated by sealed plates 16 movable within the chamber 14 and prevent intermixing of the compressible medium 17 with the electro-reactive medium 19. The plates 16 also act to distribute the applied load from the upper and lower attachment members 36, 38 across the entire cross-sectional area of the different layers.

Please amend paragraph 26 as follows:

Referring to Figures 2A and 2B, the specific cross-sectional area of the variable spring member assembly 10 may be of any shape as required by the specific application. Figure 2A illustrates one embodiment of the variable spring member assembly 10 having a circular cross-sectional area. Figure 2B illustrates another embodiment of the variable spring member having a square cross-sectional area. Note that it is within the contemplation of this invention that any cross-sectional area as is known by a worker in the art may be used depending on application specific requirements of the variable spring member assembly 10.

Please amend paragraph 27 as follows:

The alternating layers of compressible medium 18, 22, 26 and electro-reactive medium 20, 24, 28 provide an overall stiffness of the entire spring member assembly. The controller 40 receives inputs 42 indicative of environmental factors for a specific application. The controller then excites the coil assemblies 30 to vary the physical properties of electro-reactive medium 19 within each layer. Each of the layers of electro-reactive medium may be activated simultaneously or individually, depending on the stiffness desired of the spring member in response to specific environmental conditions. Further, each of the layers of electro-reactive medium may be excited at different magnitudes to further vary the range of spring stiffnesses achievable by the variable spring member assembly 10.

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Please amend paragraph 28 as follows:

The housing 12 defines a recess 32 adjacent layer 24 of electro-reactive medium. This recess 32 corresponds to a shoulder 34 formed of electro-reactive medium 19 disposed within the recess 32. Energizing the coil 30 of layer 24 locks the layer 24 from movement relative to the inner walls of the chamber 14. Locking the layer 24 removes layers above and below from engagement to change the stiffness of the variable spring member assembly 10. Locking layer 24 changes the overall stiffness of the variable spring member assembly 10 to that of the layers 18, 20, 22 for any input through the upper attachment member 36. Locking layer 24 functions much like locking one or more coils of a spring together in a conventional coil spring member to change and increase the stiffness of the coil spring. As appreciated, locking the layer 24 prevents movement of the lower layers 26, 28 through a full range movement allowable when the layer 24 is not in an energized and locked position. The controller 40 can energize the layer 24 separately from the other layers 20, 26 of electro-reactive medium 19 in order to change the stiffness characteristics of the variable spring member assembly 10.

Please amend paragraph 30 as follows:

The variable spring member 50 includes a recess 62 within the inner chamber 60 of the housing 58. The layer 54 of electro-reactive medium 55 is adjacent the coil assembly 66. The coil assembly 66 is controlled by controller 68. Attachment members 70, 72 attach to the structure or structures movable relative to the variable spring member 50. In this embodiment, the layers 52 and 56 comprise the compressible medium and act in concert with the electro-reactive medium 55 providing the overall stiffness of the variable spring member 50. Energizing the coil assembly 66 locks the central layer 54 of electro-reactive medium 55 that in turn reduces the number of compressible layers capable of absorbing input energy. Reduction in engaged layers changes stiffness providing the desired variation in spring stiffness.

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Please amend paragraph 32 as follows:

Referring to Figure 4, yet another embodiment of the variable spring member is shown at 80 and includes first and second layers 82, 84. Housing 86 defines a chamber 88 including ~~plates~~ plate 98. The ~~plates~~ plate 98 move vertically within the chamber 88 and separate the compressible medium 83 and electro-reactive medium 85 within layers 82, 84. A coil assembly 90 installed adjacent layer 84 of electro-reactive medium 85 responds to signals from controller 92. The controller 92 adjusts physical characteristics of the electro-reactive medium 85 varying compressibility of the layer 84. Adjustments of the physical properties of the electro-reactive medium ~~[[83]]85~~ changes the compressibility of the electro-reactive layer ~~[[34]] 84~~ thereby varying the stiffness of the variable spring member 80.

Please amend paragraph 35 as follows:

This invention also includes a method of absorbing input energy with the variable ~~dampening~~ spring member assembly 10. The method comprises the steps of separating alternating layers of compressible medium and electro-reactive medium within a housing. The method continues by sensing external conditions indicative of predetermined conditions and creating a magnetic field adjacent the electro-reactive medium for adjusting the compressibility of each of the electro-reactive layers in response to those external inputs. The method further includes the step of locking one of the layers of electro-reactive medium in order to contain one or more layers of compressible medium. The method also includes the step of varying the magnetic field of each of the electro-reactive mediums independent of each other in order to provide a varying overall stiffness of the variable spring member. As is appreciated, it is within the contemplation of this invention that the controller will be able to control the coil assemblies for each of the electro-reactive medium layers independent of each other in order to vary the overall stiffness of the variable spring member.